



STATE OF MICHIGAN
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF GEOLOGICAL SURVEY
PO BOX 30256
LANSING MI 48909-7756

PERMIT TO ☒ DRILL ☐ DEEPEN ☐ CONVERT
AND OPERATE A MINERAL WELL

GRANTED UNDER THE PROVISIONS of Part 625 Mineral Wells, of Act 451, PA 1994, as amended. Violation of and/or non-compliance with the provisions of this act or its rules, instructions or orders of the supervisor, or these permit conditions may result in penalties. This permit includes as requirements all the operations and methods proposed by the applicant in the application to drill, unless rejected or altered by the DEQ. This permit is also subject to the general and specific conditions identified on this page and/or attached to it. Initiation of any work under this permit confirms the permittee's acceptance and agreement to comply with its terms and conditions.

Permit number M-523	Issue date 2/07/2008	Expiration date 2/07/2010
Well name and number BEELAND DISPOSAL WELL #1		
Formation at total depth LUCAS/DUNDEE	Completion formation DUNDEE	
Permitted total depth (measured) 2450	Permitted total depth (TVD) 2450	
Type of Permit DISPOSAL WELL		
Issued to BEELAND GROUP, LLC 10577 ALBA HIGHWAY ALBA, MI 49611		

Location and footages

SE SW SE of Section 14, 30N, 5W, of Star Township, Antrim County

CASING AND SEALING REQUIREMENTS

HoleDepth.	Hole dia.	Casing O.D.	Wt. /ft.	Grade	Condition	Depth (M.D.)	Sacks cmt	Cement top	Mud wt.
174'	DRIVEN	13 3/8"	54.5-60	COND	New	175	DRIVEN		
950'	12 1/4"	9 5/8"	36	K-55/J-55	New	950	249	12	
2150'	8 1/2"	7"	23-26	K-55/J-55	New	2150	264	12	
2350'	6 1/4"	4 1/4"	11.6	K-55/J-55 Tubing	New	2350			
2450'	6 1/4"	Open Hole				2450			

SPECIFIC PERMIT CONDITIONS

1. As required in R 299.2414(1), the well shall not be used for injection until the Supervisor of Mineral Wells confirms and authorizes its use for that purpose. The authorization shall be effective for a period of ten (10) years and may be modified during that period in the event an alternative method of handling and disposing the Bay Harbor leachate is approved by the Department. At the end of the 10 year interval, Beeland Group or its successors must apply in writing for continued authorization to use the well for injection.
2. Notify Raymond Vugrinovich at (517)241-1532, Rick Henderson at (231)775-3960 x6340, and Mark Cromell at (989)705-3407 at least 72 hours before moving onsite to begin drilling.
3. An onsite, inground reserve pit is allowed to contain drilling fluids, mud, and cuttings. If utilized, the Area Geologist (Mark Cromell (989)705-3407) shall be notified prior to excavation, pit liner installation and pit encapsulation. If steel tanks are used, the cuttings and mud shall be disposed of at the Waters Landfill, Waste Management Facility. In either case, residual fluids shall be hauled off site and disposed of in compliance with all applicable laws and regulations.
4. A 12 hour minimum W.O.C. time is required on 7" csg. cement job.
5. This well shall NOT penetrate more than 10 feet into the Lucas formation at total depth.
6. This disposal well shall not be utilized until the permittee submits plans and receives approval for the surface facility.
7. All geophysical logs recorded during or following drilling shall be filed in both paper format and electronic format as *LAS files.

The above-listed permit conditions are imposed under authority of the Supervisor of Mineral Wells granted in Sections 62502, 62505, 62506, 62508, 62516 of Part 625, Mineral Wells, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and Rules R 299 2216, R 299 2252, R 299 2262, R 299 2267, R 299 2268, and R 299 2298, promulgated under the authority of Part 625.

GENERAL PERMIT CONDITIONS

1. The permittee is required to give notice to public utilities in accordance with Act 53, PA 1974, M.C.L. 460.701-460.718.
2. This permit does not convey property rights in either real estate or material; neither does it authorize any injury to any public or personal property.
3. This permit does not preclude the necessity of obtaining other local, state, or federal permits which may apply to the drilling or operation of this well.
4. All trash and garbage shall be removed from the drill site at the completion of drilling; no garbage may be buried on site.

Office to be notified prior to preparing location and prior to moving in drilling equipment:

See #2 Above.

Permit issued for the Supervisor of Mineral Wells by